CITY OF HAYWARD

AGENDA REPORT

AGENDA DATE 11/28/00

AGENDA ITEM

WORK SESSION ITEM

TO: Mayor and City Council

FROM: Director of Public Works

SUBJECT: 2000 Urban Water Management Plan

RECOMMENDATION:

It is recommended that the City Council adopt the attached resolution approving the 2000 Urban Water Management Plan.

BACKGROUND/DISCUSSION:

The 1983 Urban Water Management Act requires all California urban **water** agencies that supply more than 3,000 acre feet per year of water or have more than 3,000 connections to prepare an Urban Water Management Plan (UWMP) every five years. The next UWMP must be submitted to the State Department of Water Resources before the end of 2000.

The State utilizes UWMPs for water demand and supply planning at the state level. The document also provides the State with information about emergency planning and water conservation efforts. Locally, preparation of this document allows for a comprehensive and systematic review of water usage trends, projected water demand and supplies, water sources, and potential water reduction opportunities.

Council's Environment Committee (CEC) reviewed the UWMP on November 1. The staff report prepared for the CEC is attached. The CEC report provides a summary of the significant aspects of the 2000 UWMP, and a review of the CEC discussion is presented in this agenda report. Copies of the entire UWMP are available in the City Clerk's Office.

The UWMP projections are based on a combination of historical data, current water demand and supply, and projected development and growth within the City. Staff reviewed a variety of sources, including: water usage and supply data for the preceding five years; current water usage records; ABAG population estimates; projected single- and multi-family dwelling units; existing General Policies Plan (currently being updated); potential water usage from various types of industrial and commercial facilities; and potential **expansion** of institutional facilities. The growth projections shown **in** the UWMP are educated estimates, as there is no way of anticipating with certainty what the City's water demands will be in the long term. However, the State requires the City to look at water demand and supply over the next 20 years, calling for the consideration of long-term, overall economic and development activity, not only current development and consumption trends. In other words, for the purposes of water

demand planning, it should not be assumed that recent economic growth will continue over the life the of proposed UWMP, just as any recessions that may be experienced in the next 20 years will not necessarily be of a long duration.

Besides the UWMP, an update of the Water Distribution System Master Plan will be prepared. Water demand projections are a key component of the Master Plan, and further water use analysis that is done as part of the Master Plan project may result in more refined projections. The Water System Master Plan update will follow the development of projections for the General Plan update currently underway.

Environmental Review

Pursuant to Section 15282 of the California Environmental Quality Act Guidelines, the Urban Water Management Plan is statutorily exempt from environmental review.

Council's Environment Committee Review

Council's Environment Committee (CEC) reviewed the draft UWMP on November 1. The Committee discussed the adequacy of the UWMP in view of possible remaining development, and intensification of current land uses. Specifically, the Committee asked staff to confirm that the projected water usage would be sufficient to accommodate higher density housing, new redevelopment opportunities, and industrial growth.

In response to the Committee's comments, staff performed additional analysis on the projected water usage. The average annual increase percentages for all customer segments are valid based on available data and growth assumptions. In addition to the annual percentage increase for industrial use, Staff had included a one-time increase of 400,000 gallons per day (gpd) to accommodate a major industry, such as a high-tech manufacturing company. (This amount of daily use is higher than the current average use by any of any one existing entity in the City and should be adequate to accommodate a mid-sized high tech manufacturing facility.) Using the assumptions that are detailed in the current draft plan, and in the CEC staff report, the water usage in 2020 is projected to be 31.5 million gallons per day (mgd), which is a 64% increase over the expected 2000 usage of 19.2 mgd. This is approximately twice the rate of growth in consumption that occurred during the last 20 years. More relevant to this discussion is a lo-year comparison, which shows that the projected increase. in consumption from 2000 to 2010 is about 3 1.6 %, while the actual increase between 1989 and 1999 was 24.3 % and included recovery from an extended drought. After careful review, staff believes that the projections that are currently in the UWMP are reasonable for planning purposes and no changes are necessary.

The Committee offered comments on the use of recycled water and the need to do more. The information in the draft UWMP regarding water recycling is appropriate as it reflects the City's current position and use of recycled water. If more aggressive policies were adopted in the future by City Council, new recycled water usage projections would be included in the 2005 update.

The Committee also expressed some reservations about the Water Rationing Program described in the UWMP, which is essentially the program that was implemented during prior water shortages. There was concern that the rationing methods may have created undue hardship for customers who practiced conscientious water conservation when water supplies were normal. It is important to note that the UWMP does not commit the City to using this specific water rationing methodology in the future. It is largely up to the City Council to decide at the time of a drought how a given cutback is accomplished within the City.

The CEC recommended approval of the UWMP as prepared, but asked staff to ensure that water usage projections could accommodate anticipated industrial and commercial growth in the City. Based on the available current consumption data, consumption trends over the last few years, and land use and development projections, staff believes that the water usage projections included in the UWMP are realistic.

Prepared by :

Alex Ameri, Deputy Director of Public Works

Recommended by:

Dennis L. Butler, Director of Public Works

Approved by:

Jesús Armas, City Manager

Attachment: Exhibit A - Council Environment Committee Staff Report of November 1, 2000

CITY OF HAYWARD
STAFF REPORT

AGENDA DATE 11/01/00

AGENDA ITEM 1

TO: Council's Environment Committee

FROM: Director of Public Works

SUBJECT: 2000 URBAN WATER MANAGEMENT PLAN

RECOMMENDATION:

It is recommended that the Committee recommend to the City Council approval of the attached Urban Water Management Plan,

BACKGROUND:

All California water suppliers that provrde more than 3,000 acre-feet of water per year or have more than 3,000 water connections are required by State law to update their Urban Water Management Plans (UWMP) every five years. The next UWMP update must be submitted to the State by December 31, 2000 after approval by the City Council, Hayward's UWMP is being prepared in accordance with all State guidelines.

UWMPs provide a tool for water supply planning at the State level. These Plans allow for a State-wide view of water usage trends, future supplies and demands, alternative sources, and demand management methods. UWMPs also afford local water agencies, such as the Hayward Municipal Water System, a systematic means of reviewing historical usage data, anticipated water needs, water shortage contingency plans, and potential water reduction opportunities. The following discussion will summarize the major aspects of Hayward's UWMP.

DISCUSSION:

Hayward Water Source and Facilities

Since 1963, Hayward has received all of its potable water supply from the San Francisco Public Utilities Commission (SFPUC), primarily through the Hecch Hetchy Water System. A contract approved in the early 1960s stipulates that SFPUC will provide Hayward with all of the water it needs as longs as water supplies are normal and as long as SFPUC is able to deliver the water. The City has installed four groundwater wells, which could supply up to 9 million gallons per day in the event *of* an emergency. (A fifth well is scheduled to be completed in the spring of 2001.) Also:

EXHIBIT A

intertie connections are available to both East Bay Municipal Utilities District (EBMUD) and Alameda County Water District systems, which if activated in an emergency, could provide up to 15 million gallons per day. Both of these emergency supplies are, however, intended for short-term use and could not be utilized for a long duration.

The SFPUC recently approved a Water Supply Master Plan that identified improvements and upgrades needed to ensure the long-term reliability and high quality of Hetch Hetchy water. City staff will be monitonng the implementation of these critical projects: however, because of the favorable agreement with SFPUC for water and the cost of developing additional supplies, there are currently no plans to obtain water on an ongoing basis from any other source.

The Hayward Water Distribution System consists of about 325 miles of pipeline, 13 reservoirs, 5 pump stations, and 28 pressure reducing valves. Water is received from SFPUC through two aqueducts, and all facilities are monitored by a Supervisory Control and Data Acquisition (SCADA) system. The only treatment performed by Hayward is the addition of fluoride to the water.

Projected Water Usage

In 1999, Hayward purchased an average of about 18.2 million gallons per **day** (mgd) of water from SFPUC. Since the last update of the UWMP in 1995, water usage has risen annually. Several factors account for these increases. About 1,100 single- and multi-family housing units were constructed between 1995 and 1999. Many of these dwelling units, such as those constructed as part of the Mission Hills development, were large in square footage and extensively landscaped, so water demand from these residents is significant. Mission Hills included a golf course, which has a high water demand. The downtown area has seen residential and commercial development over the past five years. Also, sizable commercial and industrial growth occurred throughout the city, including several water intensive industrial uses, such as Berkeley Farms. Less significant, but nonetheless noteworthy, is that per household water usage increased, particularly for landscape irrigation, as water supplies normalized in the years following the last drought period. Staff analyzed the historical demand patterns that contributed to water demand increases over the past few years, and which brought the City to the 18.2 mgd figure in 1999.

Staff has projected that annual water usage in Hayward could grow to about 31.4 mgd by 2020, which is typically referred to as the year that Hayward will be built out. It is important to note that many unknown factors, such as the pace of residential development, types of industry that may locate in Hayward, plumbing efficiency standards, and commercial growth, will impact water usage over the next 20 years. The numbers that are presented in the UWMP are estimates at best, and presume a certain set of conditions that may or may not be realized. The existing General Policies Plan, which is in the preliminary stages of being updated, was consulted to determine anticipated housing development trends. Staff also utilized forecasts from the Association of Bay Area Governments (ABAG) and Community and Economic Development data. Following are the underlying assumptions, by user classification, on which water usage projections are based.

Anticipated water demand for residential use assumes that residential development will proceed in accordance with current projections, including development of Walpert Ridge and the south of 92 area, to the total potential 51,000 dwelling units in 2020. The usage projections for both single- and

multi-family residences also assumes that additional landscaping will be added as older units are upgraded. Water usage per-household will also Increase as the average number of persons in a household rises in keeping with Association of Bay Area Governments (ABAG) projections. Generally, a 3% average annual increase in single-family residential water consumption is expected through 2005 due to the level of anticipated development. This average annual rate of increase will likely drop to 2.5% until 2010, and then level off to 2% per year through 2020. Multi-family usage is expected to increase by about 1.7% per year, mainly due to in-fill development, additional landscaping, and a gradual increase in the number of persons per household.

Commercial and industrial water usage is difficult to predict with certainty. During the last half of the 1990s, commercial usage increased by an average of 3% per year, while industrial consumption rose by an average 5.8%. Staff believes that a continued 3% annual increase in commercial usage is reasonable given the anticipated commercial development. and irrigation of the Walpert Ridge golf course and the new sports park. The industrial increase rate has been lowered to 3%, since the mid- to late-1990s saw the relocation of Pepsi and Berkeley Farms, two high-volume water users, within a short period of time. The industnal projections also allow for a one-time increase of about 400,000 mgd to accommodate the possibility of a major water user, such as a high tech company, locating in Hayward.

Institutional (e.g., schools: government facilities) water usage has been stable for the past few years. Staff has assumed a 1% annual increase through 2020 to allow for new or expanded educational facilities to serve new development, increased landscaping and irrigation in currently neglected playing fields and around buildings, and possible expansion or new construction at Chabot College or California State University Hayward.

The following table summarizes water usage projections by classification through 2020. Unaccounted water refers to water that is lost primarily through leaks. The City undertook a comprehensive leak detection and repair effort in the mid-1990s and decreased the amount of unaccounted water significantly. However a conservative 9% per year figure is used for the estimating purposes.

Projected Water Usage by Customer Classification
(In Million Gallons per Day)

	2000	2005	2010	2015	2020
Single-family Residential	7.5	8.8	9.9	10.9	12.1
Multi-Family Residential	3.3	3.5	3.8	4.1	4.5
Commercial	1.8	2.1	2.5	2.9	3.3
Industrial	3.7	4.7	5.4	6.3	7.3
Institutional	1.3	1.3	1.4	1.5	1.6
Unaccounted/Hydrants	1.6	1.8	3.1	2.3	2.6
Total	19.2	22.2	35.1	28.0	31.4

Water Recycling

The State requires water agencies to review current and potential uses of recycled water; that is, treated wastewater that can be utilized for specific applications, such as irrigation and construction projects, which do not require potable water. The City of Hayward disposes of wastewater through the East Bay Dischargers Authority (EBDA) pipeline. EBDA's goal is to maximize reuse of water and, to that end, EBDA prepared a study to investigate potential recycling projects that would be economically feasible and had a high possibility of being implemented.

EBDA currently distributes about 3,190 acre-feet of recycled wastewater per year to two locations within Hayward: the Skywest Golf Course for irrigation; and the Hayward Marsh for wetlands enhancement. Other potential uses include irrigation at the Hayward Executive Airport and local cemeteries. It should be noted, however, that producing good quality wastewater and delivering it to appropriate locations is often cost prohibitive at the local level. The City and EBDA remain committed to investigating potential uses of recycled water, particularly at the regional level, and working with interested agencies to treat and deliver wastewater for suitable purposes.

Water Shortage/Emergency Contingency Plans

There are several water supply uncertainties that Hayward, and all water suppliers in the Bay Area, must be prepared for, primarily water shortages due to climatic conditions and interruptions in supply because of a catastrophic event such as an earthquake. The UWMP includes a section on planning for such events.

Regarding water shortages due to insufficient supplies, the City has experienced such shortages in the past, most recently in the early 1990s. Future rationing programs are expected to be modeled upon very successful efforts in the past to reduce consumption during drought periods. Depending on the severity of the drought, the rationing program may be voluntary or mandatory, and will include restrictions or prohibitions on specific non-essential activities, as defined in the Water Rationing Ordinance. Activities that may be affected include: using water to fill swimming pools and decorative fountains; washing of vehicles except in commercial car washes, serving water in restaurants except by request; and washing of structures and hard-surface areas.

In order to be fair and to not penalize customers who practice good water conservation when water supplies are normal, the City utilizes a "sliding percentage scale" to determine water allotments for residential customers. Each single-family residence is given an allocation based on the water consumption prior to the drought. Customers who use more water are required to cut back by a greater percentage, whereas customers who used less water during non-rationing periods are not asked to cut back as much. No residence is asked to reduce water consumption below 125 gallons per day, which is considered the minimum needed for essential indoor use. Commercial, industrial, multi-family, and institutional customers are asked to cut back primarily on irrigation water usage, with smaller reductions in domestic and process water consumption. Customers who exceed their allotment must pay excess use charges.

The amount of water available to Hayward during a drought depends on the system-wide availability. A Water Shortage Allocation Plan is currently being developed by SFPUC and all suburban

agencies who purchase SFPUC water. The Allocation Plan will formalize the methodology for allocating water between San Francisco and other communities. Additionally, the Plan will address the issue of allocation among suburban users. It is expected that this plan will be finalized later this year and submitted for approval by all participating agencies.

Hayward has taken significant steps to supplement potable water supplies in the event of an interruption in supplies from SFPUC resulting from an earthquake or other disaster. As noted earlier in this report, interties have been established with EDMUD and ACWD, which could provide up to 15 million gallons per day, if water is available from these agencies. Also. four wells have been constructed within Hayward that could supply up to 9 million gallons per day. Both of these sources are intended for short-term use only and would generally be activated only in the event of an emergency. Activation of one or both of these sources would be done in accordance with approved emergency response procedures.

Water Conservation

Although Hayward has a favorable agreement with SFPUC for water supplies, the City is committed to implementing an effective water conservation program in order to reduce demand. Hayward is signatory to a Memorandum of Understanding with the California Urban Water Conservation Council, which contains 14 specific Best Management Practices (BMPs). Following are the water conservation programs that have been implemented by Hayward:

- Residential Plumbing Fixture Replacement Program: Residents were provided with a water conservation kit, including a low-flow showerhead, bathroom and kitchen faucet aerators, toilet tank bags, and dye tablets. This kit was made available to single-family residents at no charge. About 4,800 kits were distributed in a five-month period.

- Ultra-Low Flow Toilet Rebate Program: Residents may receive a $100 rebate for the replacement of an existing toilet with a 1.6 gallon per flush toilet unit. Since March of this year, rebates for about 125 toilets have been issued. Close to 500 customers have expressed interest in the program. Additional promotion of this program may take place in the spring.

- Public Awareness and Education: Staff attends community events to provide information about water conservation. Each year, the City mvites school children to participate in a poster contest to raise awareness of the importance of water conservation.

- Leak Detection Program: In the mid-1990s, the City performed a comprehensive leak audit on the water distribution system and made a number of repairs to reduce water loss. Each year, unaccounted water is tracked to determine if additional efforts are needed.

- Water Conservation Rates : The City has established an inclining block rate structure to encourage lower water usage. The cost of the first 20 units (one unit = 748 gallons) in a two-month billing period is $1.65 per unit, and units in excess of 20 cost $1.95 per unit. Most residential customers are in the first tier. As an additional incentive. the City offers reduced sewer service charges for lower water consumption, A customer stay within who uses five or fewer units of water qualifies for the “lifeline” sewer rate, and water usage of 6 to 10 units in a billing

period allows customers to pay the "economy" rate. About 4,200 customers qualified for these lower sewer rates in 1999.

- Water Waste Prohibition: In 1993, the City adopted an ordinance prohibiting certain practices that are wasteful and unnecessary. Specifically, the washing of buildings, structures, paved areas, and vehicles is not allowed unless the hose is equipped with a shut-off nozzle. Any activity that results in runoff to the gutters or streets, so-called "gutter flooding," is prohibited. The ordinance also encourages the use of recycled water for all commercial car washes and certain irrigation needs.

- Water Efficient Landscape Ordinance: All new developments in Hayward are required to comply with water efficiency standards as specified in the Ordinance. Landscape plans are reviewed by the City's Landscape Architect to ensure compliance.

Future water conservation efforts may focus on multi-family dwelling units, commercial/industrial water usage, and landscape irrigation. A cost effectiveness analysis will be prepared for each program to determine how best to use resources.

Staff believes that the 2000 UWMP provides a realistic look at Hayward's water supply and demand situation over the next 2020 years, given the information available at this time. The UWMP is scheduled for review by the full City Council in late November. Appropriate public notice will be provided, and a copy of the draft Plan will be available for review by all interested parties.

Prepared by:

Alex Ameri, Deputy Director of Public Works/Utilities

Recommended by:

Dennis L. Butler, Director of Public Works

Approved by:

Jesús Armas, City Manager

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HAYWARD CITY COUNCIL

RESOLUTION NO.

Introduced by Council Member _____

RESOLUTION ADOPTING THE 2000 URBAN WATER MANAGEMENT PLAN FOR THE CITY OF I-IAYWARD

WHEREAS, the 1983 Urban Water Management Act requires all California urban water agencies that supply more than 3,000 acre feet per year of water or have more than 3,000 connections to prepare an Urban Water Management Plan (UWMP) every five years and the next UWMP must be submitted to the State Department of Water Resources before the end of 2000; and

WHEREAS, locally, preparation of this document allows for a comprehensive and systematic review of water usage trends, projected water demand and supplies, water sources, and potential water reduction opportunities; and

WHEREAS, the Director of Public Works has submitted to the **City** Council for review a copy of the staff report dated November 1, 2000, prepared for Council's Environment Committee which provides a summary of the significant aspects of the 2000 UWMP and has made available for public review the 2000 UWMP in its entirety; and

WHEREAS, a public hearing was held on November 28, 2000, **in** the manner prescribed by law.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Hayward that the plan entitled "2000 Urban Water Management Plan," a copy of which is on file in the office of the Department of Public Works and the office of the City Clerk, is hereby adopted as the urban water management plan for the City of I-Iayward.

IN COUNCIL, HAYWARD, CALIFORNIA _____, 2000

ADOPTED BY THE FOLLOWING VOTE:

AYES:

NOES:

ABSTAIN:

ABSENT:

ATTEST:_____
City Clerk of the City of Hayward

APPROVED AS TO FORM:

_____
City Attorney of the City of Hayward